

Claims

1. Leukocyte stimulation matrix for the stimulation of leukocytes and/or the induction of an immunological tolerance having the following components:

- a) one or more carrier(s),
- b) a soluble matrix for embedding one or more component(s) for generating a leukocyte stimulation and/or the induction of an immunological tolerance,
- c) one or more component(s) embedded into the soluble matrix for generating a leukocyte stimulation and/or the induction of an immunological tolerance.

2. Leukocyte stimulation matrix according to claim 1 which additionally contains one or more coupling component(s) for mediating the binding between the carrier and the one or more component(s) for generating a leukocyte stimulation and/or the induction of an immunological tolerance.

3. Leukocyte stimulation matrix according to claim 2, wherein the binding is a covalent binding.

4. Leukocyte stimulation matrix according to one of the preceding claims, wherein the component for generating a leukocyte stimulation and/or the induction of an immunological tolerance is selected from the group consisting of antigens, MHC molecules, co-stimulatory factors, cell components, cell coatings, bacteria, viruses and combinations thereof.

5. Leukocyte stimulation matrix according to one of the preceding claims, wherein the component for generating a leukocyte stimulation and/or the induction of an immunological tolerance is a synthetic antigen or is obtained from viruses,

bacteria, fungi, tumours, allergens or endogenous tissue, and/or the MHC molecule and the co-stimulatory factor are obtained from endogenous tissue, cell cultures and/or synthetically.

6. Leukocyte stimulation matrix according to claim 4 or 5, wherein the component for generating a leukocyte stimulation and/or the induction of an immunological tolerance is a virus of the family of herpes viruses or a fragment thereof, preferably a cytomegalo virus or a fragment thereof.

7. Leukocyte stimulation matrix according to one of the preceding claims, wherein the carrier is selected from the group consisting of polyurethanes, polycarbonates, polystyrene, dissolvable materials used in surgery, glass, natural materials such as gut skins or biological materials such as sponges or combinations thereof.

8. Leukocyte stimulation matrix according to one of claims 2 to 7, wherein the coupling component is selected from the group consisting of cyanogen bromide, cyanoboro hydride, agarose, agarose derivatives, silane, silane derivatives or combinations thereof.

9. Leukocyte stimulation matrix according to claim 8 wherein the silane derivative is an alkoxy silane, preferably an anhydroalkoxy silane or another alkoxy silane having at least one carboxyl group.

10. Leukocyte stimulation matrix according to any one of the preceding claims, wherein the soluble matrix is made of long chain sugar compounds such as starch, cellulose, glycogen on the one hand and/or polyethylene glycol on the other hand.

11. Leukocyte stimulation matrix according to claim 10, wherein the soluble matrix is made of 50-90 wt.%, preferably 60-80 wt.% of a long chain sugar compound and 10-50 wt.%, preferably

20-40 wt.% of polyethylene glycol, based on the total of long chain sugar compound and polyethylene glycol.

12. Leukocyte stimulation module comprising a housing with at least one opening and a leukocyte stimulation matrix according to any one of the preceding claims contained therein.

13. Leukocyte stimulation module according to claim 12 comprising at least one inlet opening and at least one outlet opening, preferably one inlet opening and one outlet opening.

14. A process for the stimulation of leukocytes and/or the induction of an immunological tolerance characterised in that a leukocyte containing liquid is contacted with a leukocyte stimulation matrix according to any one of claims 1 to 11.

15. A process according to claim 14, wherein the contacting is carried out in a leukocyte stimulation module according to claim 12 or 13.

16. The use of a leukocyte stimulation matrix according to any one of claims 1 to 11 or a leukocyte stimulation module according to claim 12 or 13 for the stimulation of leukocytes and/or the induction of an immunological tolerance.

17. The use of a leukocyte stimulation matrix according to any one of claims 1 to 11 or a leukocyte stimulation module according to 12 or 13 in a method for detecting distribution of activated T-cell subtypes or for vaccinations.